

Claims

- [c1] A method of making a filter medium for use in a filtering application at an application temperature comprising:
providing a substrate;
providing a polyimide stiffening agent;
treating the substrate with the polyimide stiffening agent; and
curing the treated substrate, wherein the treated substrate with the polyimide stiffening agent is capable of withstanding at least 100,000 cleaning pulses at the application temperature.
- [c2] The method of claim 1, further including calendering the substrate after the step of providing a substrate.
- [c3] The method of claim 1, wherein the substrate is selected from the group consisting of polyarylene sulfides, aramides, polyimides, glass, acrylics, pre-oxidized acrylics and mixtures thereof.
- [c4] The method of claim 1, wherein the polyimide is selected from the group consisting of polyamideimides, polyetherimides and polybismaleimides.

- [c5] The method of claim 1, further including pleating the treated substrate.
- [c6] The method of claim 5, wherein the pleating of the treated substrate is at a temperature above the application temperature.
- [c7] The method of claim 1, wherein the polyimide stiffening agent is about 2% to about 20% by weight of the total weight of the filter medium.
- [c8] The method of claim 1, wherein the application temperature is greater than about 375 °F.
- [c9] A method of making a filter medium for use in a filtering application at an application temperature comprising:
 - providing a polymer substrate;
 - calendering the polymer substrate;
 - providing a polyimide stiffening agent;
 - treating the calendered polymer substrate with the polyimide stiffening agent; and
 - curing the treated polymer substrate, wherein the treated polymer substrate with the polyimide stiffening agent is capable of withstanding at least 100,000 cleaning pulses at the application temperature.
- [c10] The method of claim 9, wherein the polymer substrate is selected from the group consisting of polyarylene sul-

fides, aramides, polyimides, glass, acrylics, pre-oxidized acrylics and mixtures thereof.

- [c11] The method of claim 9, wherein the polyimide is selected from the group consisting of polyamideimides, polyetherimides and polybismaleimides.
- [c12] The method of claim 9, further including pleating the treated polymer substrate.
- [c13] The method of claim 12, wherein the pleating of the treated substrate is at a temperature above the application temperature.
- [c14] The method of claim 9, wherein the polyimide stiffening agent is about 2% to about 20% by weight of the total weight of the filter medium.
- [c15] The method of claim 9, wherein the application temperature is greater than about 375° F.
- [c16] A method of making a filter medium for use in a filtering application at an application temperature comprising:
 - providing a substrate;
 - calendering the substrate;
 - providing a polyimide stiffening agent;
 - treating the calendered substrate with the polyimide stiffening agent;

curing the treated substrate; and
pleating the treated substrate at a temperature that is
higher than the application temperature.

- [c17] The method of claim 16, wherein the substrate is selected from the group consisting of polyarylene sulfides, aramides, polyimides, glass, acrylics, pre-oxidized acrylics and mixtures thereof.
- [c18] The method of claim 16, wherein the polyimide is selected from the group consisting of polyamideimides, polyetherimides and polybismaleimides.
- [c19] The method of claim 16, wherein the calendered substrate with the polyimide stiffening agent is capable of withstanding at least 100,000 cleaning pulses at the application temperature.
- [c20] The method of claim 16, wherein the polyimide stiffening agent is about 2% to about 20% by weight of the total weight of the filter medium.
- [c21] The method of claim 16, wherein the application temperature is greater than about 375°F.